



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL MARINE FISHERIES SERVICE  
Northwest Region  
7600 Sand Point Way N.E., Bldg. 1  
Seattle, WA 98115

Refer to:  
OSB1999-0288

January 20, 2000

Fred Patron  
U.S. Department of Transportation  
Federal Highway Administration  
The Equitable Center, Suite 100  
530 Center Street NE  
Salem, OR 97301

Re: Biological Opinion for the Nehalem River (Burris Rd) Bridge Replacement

Dear Mr. Patron:

The National Marine Fisheries Service (NMFS) has enclosed the Biological Opinion (BO) that addresses your proposed project to replace the Nehalem River (Burris Rd) bridge near Clatskanie in Columbia County, Oregon. This project is described in your Biological Assessment (BA) submitted with your October 28, 1999, request for consultation. The Federal Highway Administration is the lead federal agency and Columbia County is the designer and builder of the project. This opinion constitutes formal consultation for the Oregon coast coho salmon.

This opinion considers the potential effects of the project on Oregon coast coho salmon (*Oncorhynchus kisutch*) which occur in the proposed project area. Oregon coast coho salmon were listed as threatened under the Endangered Species Act on August 10, 1998 (63 FR 24998), and critical habitat was proposed on May 10, 1999 (64 FR 24998). The NMFS concludes that the proposed action is not likely to jeopardize the subject species, or destroy or adversely modify proposed critical habitat. Included in the enclosed Opinion is an incidental take statement with terms and conditions to minimize the take of the subject species.



If you have any questions regarding this letter, please contact Nancy Munn of my staff in the Oregon State Branch Office at (503) 231-6269.

Sincerely,

A handwritten signature in black ink, appearing to read "William Stelle, Jr.", with a stylized flourish at the end.

**William Stelle, Jr.  
Regional Administrator**

cc: Elton Change - FHWA  
Rose Owens - ODOT Environmental  
Jeff Smith - ODOT Environmental (attachment)  
Richard Beck - ODOT Region 1  
Art Martin - ODFW  
Laura Todd - USFWS  
Bill Davis - ACOE  
Jennifer Horn - DEA (attachment)

Endangered Species Act - Section 7  
Consultation

Biological and Conference Opinion

Nehalem River (Burris Road) Bridge Replacement  
Columbia County

Agency: Federal Highway Administration

Consultation Conducted By: National Marine Fisheries Service,  
Northwest Region

Date Issued: January 20, 2000

Refer to: OSB1999-0288

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## I. BACKGROUND

On November 1, 1999, the National Marine Fisheries Service (NMFS) received a Biological Assessment (BA) and request from the Federal Highway Administration (FHWA) for Endangered Species Act (ESA) section 7 formal consultation for a bridge replacement over the Nehalem River at Burris Road in Columbia County, Oregon. Burris Road intersects with the Nehalem Highway (OR 47) on the north side of the Nehalem River. The FHWA is the lead agency and Columbia County has designed the project and will administer the construction contract. This Biological Opinion (Opinion) is based on the information presented in the BA and the result of the consultation process.

FHWA/Columbia County has determined that the Oregon coast coho salmon (*Oncorhynchus kisutch*) (OC coho) may occur within the project area. Since critical habitat has been proposed for OC coho salmon, this Opinion serves as the NMFS Conference Opinion until such time that NMFS publishes a final critical habitat rule.

FHWA/Columbia County is proposing to replace the existing bridge by building a new bridge immediately downstream of the existing bridge. The existing bridge is considered unsafe because of its narrow width and its approach to the highway. The replacement bridge would be a wider structure to better accommodate vehicles entering and leaving the bridge and accommodate legal highway loads.

The effects determination was made using the methods described in *Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale* (NMFS 1996). FHWA/Columbia County determined that the proposed action was likely to adversely affect the OC coho.

This Opinion reflects the results of the consultation process. The consultation process has involved a site visit and correspondence and communications to obtain additional information and clarify the BA. Additional information was received December 17, 1999. As appropriate, modifications have been made to the original proposal to reduce impacts to the indicated species. This has included removing a proposed right-turn refuge lane on OR 47 from the project proposal and adding habitat enhancement activities.

The objective of this Opinion is to determine whether the action to replace the Burris Road Bridge is likely to jeopardize the continued existence of the OC coho or destroy or adversely modify proposed critical habitat.

## **II. PROPOSED ACTION**

Burris Road crosses the Nehalem River approximately 9 miles south of the City of Clatskanie in Columbia County. At the project site, the Nehalem Highway (OR 47) parallels the northwest bank of the Nehalem River.

The existing one-lane bridge is 192 feet long and 15.5 feet wide. The main span is a 100-foot steel pony truss. The two approach spans were updated in 1991 to four 18-inch deep, pre-cast and pre-stressed concrete slabs. Large concrete bents support the main span and approach spans. The bents are located in the water during summer low flows. The abutments are steel H-pile bents with a timber lagging back wall.

The proposed new bridge will be a two-lane, three-span structure. It will be 24 feet wide and will be located immediately downstream of the existing bridge. The bridge will be supported on steel pilings and concrete pile caps at bents 1 and 4 (located at the top of the bank), and on concrete columns at bents 2 and 3 located within the stream channel. Most in-water work will be conducted during the Oregon Department of Fish and Wildlife (ODFW) preferred in-water work period of July 15<sup>th</sup> to August 31<sup>st</sup>. An extension of the in-water work window has been approved; the temporary work platforms and the drilled shafts for bents 2 and 3 can be constructed from July 3 to July 14. The work platform used to construct bents 2 and 3 will be constructed out of timber, steel, or concrete, and will be large and strong enough to support a drill rig.

Once the bents are constructed, the slabs and box beams can be placed. The box beams of the center span will require two cranes to lift them into place. Once placed, the bridge rail, end panels, guardrail, and paving can be completed. The approach roadway will be paved to the end of the approach guardrails. No riprap will be placed in the river.

### **Removal of Existing Bridge**

The center steel span would be removed first. The deck removal could result in some small pieces of woody debris falling into the water. The concrete end spans would also be lifted by crane and placed on land. In-water work is necessary to remove the two concrete center bents. The preferred method of removal is to break up the bents with a jackhammer or saw, and then remove them in pieces. The contractor is required to prevent debris from entering the active flowing stream.

### **Staging**

Traffic will be maintained on the existing bridge during construction of the new bridge.

## **Revegetation**

Both banks will be replanted after the temporary work platform is removed. Native plants will be used including red alder, western red cedar, and red-osier dogwood.

## **Habitat Enhancement**

To mitigate for project impacts to in-water and riparian habitat, FHWA/Columbia County will contribute \$4000 to the Nehalem Watershed Council to improve habitat. The restoration activities are being coordinated with ODFW and address habitat needs for salmonids in the upper Nehalem watershed, and will include the placement of wood in the stream, removal of blackberries and replacement with native riparian plantings, and fencing to exclude domestic animals from riparian areas. These restoration activities will be located within 5 miles of the bridge site. The Nehalem Watershed Council is currently working with ODFW and the Oregon Watershed Enhancement Board (OWEB) to find matching funds to further support this work. The net result of the restoration work will be lower water temperatures and improved water quality.

### **III. BIOLOGICAL INFORMATION AND CRITICAL HABITAT**

The Oregon coast (OC) coho salmon Evolutionarily Significant Unit (ESU) was listed as threatened under the ESA by the NMFS on August 10, 1998 (63 FR 42587). Biological information on OC coho salmon may be found in Weitkamp et al. (1995). Critical habitat was proposed for the OC coho salmon on May 10, 1999 (64 FR 24998). Proposed critical habitat for OC coho salmon consists of all waterways and naturally impassable barriers and several dams that block access to former coho salmon habitats. In the proposed rule, NMFS recognizes that estuarine habitats are critical for coho salmon and has included them in the designation. The adjacent riparian zone is also included in the designation. This zone is defined as the area that provides the following functions: Shade, sediment, nutrient or chemical regulation, streambank stability, and input of large woody debris or organic matter.

OC steelhead and OC cutthroat trout also occur in the project area. OC steelhead was designated as a candidate species on March 19, 1998 (63 FR 13347) and OC cutthroat trout was designated as a candidate species on April 5, 1999 (64 FR 16397). Neither ESU is likely to become listed prior to the completion of this project, therefore they are not considered further in this Opinion. Additionally, jurisdiction for cutthroat trout has been transferred from NMFS to the U.S. Fish and Wildlife Service effective January 2000.

#### **IV. EVALUATING PROPOSED ACTIONS**

The standards for determining jeopardy are set forth in section 7(a)(2) of the ESA as defined by 50 CFR Part 402 (the consultation regulations). NMFS must determine whether the action is likely to jeopardize the listed species and/or whether the action is likely to destroy or adversely modify critical habitat. This analysis involves the initial steps of (1) defining the biological requirements and current status of the listed species, and (2) evaluating the relevance of the environmental baseline to the species' current status.

Subsequently, NMFS evaluates whether the action is likely to jeopardize the listed species by determining if the species can be expected to survive with an adequate potential for recovery. In making this determination, NMFS must consider the estimated level of mortality attributable to: (1) Collective effects of the proposed or continuing action, (2) the environmental baseline, and (3) any cumulative effects. If NMFS finds that the action is likely to jeopardize the listed species, NMFS must identify reasonable and prudent alternatives for the action.

Furthermore, NMFS evaluates whether the action, directly or indirectly, is likely to destroy or adversely modify the listed species' designated critical habitat. The NMFS must determine whether habitat modifications appreciably diminish the value of critical habitat for both survival and recovery of the listed species. The NMFS identifies those effects of the action that impair the function of any essential element of critical habitat. The NMFS then considers whether such impairment appreciably diminishes the habitat's value for the species' survival and recovery. If NMFS concludes that the action will destroy or adversely modify critical habitat, it must identify any reasonable and prudent measures available.

For the proposed action, NMFS' jeopardy analysis considers direct or indirect mortality of fish attributable to the action. NMFS' critical habitat analysis considers the extent to which the proposed action impairs the function of essential elements necessary for migration and rearing of the OC coho salmon under the existing environmental baseline.

##### **A. Biological Requirements**

The first step in the methods NMFS uses for applying the ESA section 7(a)(2) to listed salmon is to define the species' biological requirements that are most relevant to each consultation. NMFS also considers the current status of the listed species taking into account population size, trends, distribution and genetic diversity. To assess to the current status of the listed species, NMFS starts with the determinations made in its decision to list OC coho for ESA protection and also considers new data available that is relevant to the determination (Weitkamp et al. 1995).

The relevant biological requirements are those necessary for OC coho salmon to survive and recover to naturally reproducing population levels at which protection under the ESA would become unnecessary.

Adequate population levels must safeguard the genetic diversity of the listed stock, enhance their capacity to adapt to various environmental conditions, and allow them to become self-sustaining in the natural environmental.

For this consultation, the biological requirements are improved habitat characteristics that function to support successful rearing and migration. The current status of the OC coho salmon, based upon their risk of extinction, has not significantly improved since the species was listed and, in some cases, their status may have worsened.

## **B. Environmental Baseline**

The current range-wide status of the identified ESU may be found in Weitkamp et al. (1995). The identified actions will occur throughout some of the range of OC coho. The defined action area is the area that is directly and indirectly affected. The direct effects occur at the project site and may extend upstream or downstream based on the potential for impairing fish passage, hydraulics, sediment and pollutant discharge, and the extent of riparian habitat modifications. Indirect affects may occur throughout the watershed where actions described in this opinion lead to additional activities or affect ecological functions contributing to stream degradation. As such, the action area for the proposed activities includes the immediate watershed containing the project and those areas upstream and downstream that may reasonably be affected, temporarily or in the long term. For the purposes of this opinion, the action area is defined as the bridge site and extending 500 feet upstream and downstream of the bridge site. Other areas of the Nehalem River watershed are not expected to be directly or indirectly impacted.

The Nehalem River can be divided into two parts based on a definite geologic break at approximately River Mile 40. The lower river above tidewater is generally high gradient. The middle and upper river is low gradient. The river is characterized by warm temperatures, low summer flows, low habitat complexity, and limited spawning habitat. The action area is within the upper Nehalem watershed.

The Nehalem River is on Oregon Department of Environmental Quality's 303(d) list of water quality limited streams because of warm temperatures during the summer. The water temperature standard for the Nehalem River near the project is 64°F. Temperatures measured during the summer commonly exceed 70°F.

Numerous agricultural, municipal, and private domestic withdrawals of water occur along the river. These water withdrawals exacerbate the water temperature problems and the low summertime flows of the river as well as further limiting habitat availability for fish.

Many factors have contributed to the decline of coho salmon in the basin. Within the Nehalem River basin two known habitat problems exist: lack of large woody debris in the channel and a deficiency of spawning gravel. Besides having limited spawning gravels, the low gradient of many of the tributaries to the middle and upper mainstem allow fine sediments to accumulate reducing the quality of the spawning habitat that does exist. Habitat complexity has been reduced from historical levels due to the

loss of large woody debris (LWD). The loss of LWD in the watershed occurred primarily due to logging prior to the Forest Practices Act of 1972. Recovery from the loss of LWD has been slow to non-existent because conifers have been removed from riparian areas, leaving red alder (*Alnus rubra*) as the dominant tree species along the river.

The middle and upper mainstem has a limited amount of spawning gravel. Instream gravel removal, much of which is illegal and unpermitted, further reduces gravel availability for spawning. Exacerbating the problem of limited spawning gravel is an increase in sedimentation, resulting primarily from forestry activities. This increased sedimentation fills interstitial spaces of the gravel, reducing its quality for spawning.

Habitat for coho salmon in the immediate area of the project is limited and of poor quality. The channel substrate in this area is composed almost entirely of bedrock. Some patches of cobbles and boulders exist in the channel, but the rock is too large for good coho salmon spawning. In addition, near the project site, there are few places providing shelter from high wintertime flows. The primary shelter from high flows is a tributary accessible through a culvert at the downstream end of the project. Some LWD along the inside of the bend may provide refuge from higher flows.

Coho salmon were historically the most abundant species in the Nehalem River (ODFW, unpublished report). Wild coho salmon are now extremely depressed, or extirpated, from the lower mainstem. However, the middle and upper drainage still contain wild coho salmon in most areas, although at depressed levels. Wild coho salmon have fared better in the middle and upper portions of the drainage because of better habitat in those areas.

Salmonid habitat near the project area is limited. Most coho salmon spawn in tributaries upstream of the project. The bedrock and large cobbles and boulders in the river near the project are not suitable for spawning by coho salmon. A chinook salmon spawning area exists downstream of the project. Coho salmon and steelhead use the section of the river adjacent to the project primarily as a migration corridor, with limited rearing.

Based on the best available information on the current status of Oregon coast coho range-wide; the population status, trends, and genetics; and the poor environmental baseline conditions within the action area (as described in the BA), NMFS concludes that the biological requirements of the identified ESU within the action area are not currently being met. Overall, spawning escapements have declined substantially during this century. Average spawner abundance has been relatively constant since the late 1970s, but pre-harvest abundance has declined. Improvement in habitat conditions is needed to meet the biological requirements for survival and recovery of these species. Availability of high quality habitat has been a significant factor in the decline of OC coho (63 FR 42587). According to the analysis presented in the BA, the following habitat indicators are either at risk or not properly functioning within the action area: temperature, sediment (turbidity), fish passage, large woody debris, pool area, off-channel habitat, refugia, streambank condition, flood plain connectivity, road density/location, disturbance history, and riparian reserves. Actions that do not maintain or restore properly functioning aquatic habitat conditions would be likely to jeopardize the continued existence of OC coho salmon.

## V. ANALYSIS OF EFFECTS

### A. Effects of Proposed Actions

The effects determination in this Opinion was made using a method for evaluating current habitat conditions, the environmental baseline, and predicting effects of actions on the baseline. This process is described in the document *Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale* (NMFS 1996). After determining the potential impacts of the action, efforts were made to avoid, minimize, and mitigate these impacts. Then, the net effects of action are expressed in terms of the expected effect – restore, maintain, or degrade – on aquatic habitat indicators in the project area. This analysis is summarized below.

The proposed action has the potential to cause the following impacts to OC coho salmon or proposed critical habitat:

- In-water work associated with the construction of new bridge bents and removal of the existing bridge bents may temporarily displace or kill juvenile coho salmon in the area. The most likely response would be displacement. Juvenile rearing in the action area during the summer is unlikely (though still possible) because of high temperatures and lack of adequate structure. This activity may also interfere with fish passage.
- Removal of the existing abutments in the riparian area will increase turbidity and suspended solids in the short term, which could interfere with rearing and migratory habitat downstream of the project.
- Construction activities within the two year flood plain will increase erosion, thus increasing turbidity levels in the Nehalem River.
- Fill and asphalt placed along the top of the north bank of the Nehalem River (needed for the wider bridge), will increase the amount of impervious surface within the steep riparian area. This will decrease the function of the riparian area in terms of peak flows, groundwater infiltration, vegetation growth, and bank stability.
- Pouring concrete to form the new piling caps and the bridge deck has the potential to cause acute toxicity problems in the river if spilled.
- Operation of machinery on and near the bridge will increase the risk of a hazardous spill in the river.
- Removal of trees and shrubs along the stream bank has the potential to impact water temperature, large wood recruitment, and nutrient supply in the Nehalem River.

The effects of these activities on listed fish and aquatic habitat factors have been limited by utilizing construction methods and approaches that are intended to avoid or minimize impacts. These include:

- All in-water work will be scheduled during the in-water work period of July 15<sup>th</sup> to August 31<sup>st</sup>, as established by Oregon Department of Fish and Wildlife, to minimize impacts to fish. An exception has been made to allow the construction of the work platform and the drilling of the

shafts for bents 2 and 3 from July 3<sup>rd</sup> to July 14<sup>th</sup>. The rationale was based on the low likelihood of juveniles being present at that time due to warm water temperatures. No extension beyond August 31<sup>st</sup> will be approved because of the presence of returning adults.

- An erosion control plan will be implemented that includes silt fences and sediment filters and routine monitoring.
- Hazardous materials, including fuel, will not be stored or transferred within 300 feet of the Nehalem River or any wetlands. No staging areas or parking areas will occur within 150 feet of any water body.
- The direct discharge of sediments or pollutants into the stream will be minimized to the greatest extent practicable. Measures described in the terms and conditions of the incidental take statement minimize the risk.

The action also includes habitat restoration to mitigate for the in-water work and riparian areas that would be permanently impacted by the action, and for impacts to water quality.

- FHWA/Columbia County will contribute \$4000 to support ongoing efforts by the Nehalem Watershed Council to restore in-water habitat and riparian habitat in the upper Nehalem watershed within 5 miles of the bridge site. These activities include placing large trees in the stream, removing blackberries, and planting native species in riparian areas. The funds will also support fencing of riparian areas to exclude domestic animals. The watershed council is working with ODFW to obtain matching funds from OWEB to further support these activities. Because of these activities, the project will result in a net improvement to habitat in the watershed, based on improvements to water temperature and water quality.

For the proposed action, the NMFS expects that the effects will tend to maintain or restore each of the habitat elements over the long term, greater than one year. However, in the short term, a temporary increase of sediments and turbidity and disturbance of riparian habitat is expected. Fish may be killed, or more likely, temporarily displaced during the in-water work (driving and extraction of piles and bents). The potential effects from the sum total of proposed actions including habitat enhancement activities are expected to restore or maintain properly functioning coho salmon habitat conditions within the action area.

## **B. Effects on Critical Habitat**

NMFS designates critical habitat based on physical and biological features that are essential to the listed species. Essential features for designated critical habitat include substrate, water quality, water quantity, water temperature, food, riparian vegetation, access, water velocity, space and safe passage. Critical habitat has not been finally designated for the OC coho; however, it is likely to include the entire project area based on the proposed rule published on May 10, 1999 (64 FR 24049).

The proposed action will affect critical habitat. NMFS expects that the net effect of the proposed action will tend to maintain or restore properly functioning conditions in the watershed under current

baseline conditions over the long term. In the short term, temporary increase of sediments and turbidity and disturbance of in-water and riparian habitat is expected. In the long term, no net loss of habitat will occur because of the proposed habitat restoration activities. NMFS does not expect that this action will diminish the value of the habitat for recovery or survival of OC coho.

### **C. Cumulative Effects**

Cumulative effects are defined in 50 CFR 402.02 as "those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation." The action area has been defined as 500 feet upstream and downstream of the bridge within the Nehalem River watershed. A wide variety of actions occur within the Nehalem watershed. NMFS is not aware of any significant change in such non-Federal activities that are reasonably certain to occur. NMFS assumes that future private and State actions will continue at similar intensities as in recent years. Future FHWA/ODOT transportation projects are planned in the Nehalem River watershed. Each of these projects will be reviewed through separate section 7 consultations, and therefore are not cumulative to the proposed action.

## **VI. CONCLUSION**

NMFS has determined, based on the available information, that the proposed action is expected to restore or maintain properly functioning OC coho salmon rearing habitat conditions within the action area. Consequently, the proposed action covered in this Opinion is not likely to jeopardize the continued existence of Oregon coast coho salmon or to destroy or adversely modify critical habitat. NMFS used the best available scientific and commercial data to apply its jeopardy analysis, when analyzing the effects of the proposed action on the biological requirements of the species relative to the environmental baseline, together with cumulative effects. NMFS applied its evaluation methodology (NMFS 1996) to the proposed action and found that it would cause minor, short-term adverse degradation of anadromous salmonid habitat due to sediment impacts, in-water construction, and habitat loss. These effects will be balanced in the long-term through the proposed mitigation. Direct mortality from this project may occur during the in-water work.

## **VII. REINITIATION OF CONSULTATION**

Consultation must be reinitiated if: The amount or extent of taking specified in the Incidental Take Statement is exceeded, or is expected to be exceeded; new information reveals effects of the action may affect listed species in a way not previously considered; the action is modified in a way that causes an effect on listed species that was not previously considered; or, a new species is listed or critical habitat is designated that may be affected by the action (50 CFR 402.16). To re-initiate consultation, ODOT should contact the Habitat Conservation Division (Oregon Branch Office) of NMFS.

## VIII. REFERENCES

Section 7(a)(2) of the ESA requires biological opinions to be based on "the best scientific and commercial data available." This section identifies the data used in developing this Opinion.

DEQ 1996. 303d List of Water Quality Limited Streams, as Required Under the Clean Water Act. Oregon Department of Environmental Quality (DEQ), Portland, Or. 1996. ([www.deq.state.or.us/wq/303dlist/303dpage.htm](http://www.deq.state.or.us/wq/303dlist/303dpage.htm)).

DEQ 1998. Draft 303d List of Water Quality Limited Streams, as Required Under the Clean Water Act. Oregon Department of Environmental Quality (DEQ), Portland, Or. 1998. ([www.deq.state.or.us/wq/303dlist/303dpage.htm](http://www.deq.state.or.us/wq/303dlist/303dpage.htm)).

DSL 1996. Essential Indigenous Salmonid Habitat, Designated Areas, (OAR 141-102-030). Oregon Division of State Lands. Portland, Or. 1996.

Feist, B.E. 1991. Potential impacts of pile driving on juvenile pink (*Oncorhynchus gorbuscha*) and chum (*O. keta*) salmon behavior and distribution. University of Washington, School of Fisheries.

NMFS (National Marine Fisheries Service) 1996. Making Endangered Species Act determinations of effect for individual and grouped actions at the watershed scale. Habitat Conservation Program, Portland, Oregon.

ODFW 1996. Database -- Salmonid Distribution and Habitat Utilization, Arc/Info GIS coverages. Portland, Or. 1996. ([rainbow.dfw.state.or.us/ftp/](http://rainbow.dfw.state.or.us/ftp/)).

Weitkamp, L.A., T.C. Wainwright, G.J. Brant, G.B. Miller, D.J. Teel, R.G. Kope, and R.S. Waples. 1995. Status Review of Coho Salmon from Washington, Oregon, and California. U.S. Dep. Commer., NOAA Tech. Memo. NMFS-NWFWC-24, 258 p.

## IX. INCIDENTAL TAKE STATEMENT

Sections 4(d) and 9 of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, and sheltering. Harass is defined as actions that create the likelihood of injuring listed species to such

an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. Incidental take is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

An incidental take statement specifies the impact of any incidental taking of endangered or threatened species. It also provides reasonable and prudent measures that are necessary to minimize impacts and sets forth terms and conditions with which the action agency must comply in order to implement the reasonable and prudent measures.

#### **A. Amount or Extent of the Take**

The NMFS anticipates that the action covered by this Opinion has more than a negligible likelihood of resulting in incidental take of Oregon coast coho salmon because of detrimental effects from increased sediment levels (non-lethal) and the potential for direct incidental take during in-water work (lethal and non-lethal). Effects of actions such as these are largely unquantifiable in the short term, and are not expected to be measurable as long-term effects on coho habitat or population levels. Therefore, even though NMFS expects some low level incidental take to occur due to the actions covered by this Opinion, the best scientific and commercial data available are not sufficient to enable NMFS to estimate a specific amount of incidental take to the species itself. In instances such as these, the NMFS designates the expected level of take as "unquantifiable." Based on the information in the biological assessment, NMFS anticipates that an unquantifiable amount of incidental take could occur as a result of the actions covered by this Opinion. The extent of the take is limited to within 500 feet of project activities.

#### **B. Reasonable and Prudent Measures**

The NMFS believes that the following reasonable and prudent measures are necessary and appropriate to minimizing take of the above species. Minimizing the amount and extent of take is essential to avoid jeopardy to the listed species.

1. To minimize the amount and extent of incidental take from construction activities within the Nehalem River, measures shall be taken to limit the duration and extent of in-water work, and to time such work to occur when the impacts to fish are minimized.
2. To minimize the amount and extent of incidental take from construction activities in or near the river, effective erosion and pollution control measures shall be developed and implemented to

minimize the movement of soils and sediment both into and within the river, and to stabilize bare soil over both the short term and long term.

3. To minimize the amount and extent of take from loss of in-stream habitat and to minimize impacts to critical habitat, measures shall be taken to minimize impacts to riparian and in-stream habitat, or where impacts are unavoidable, to replace lost riparian and in-stream function. No riprap will be used.
4. To ensure effectiveness of implementation of the reasonable and prudent measures, all erosion control measures shall be monitored and evaluated both during and following construction and meet criteria as described below in the terms and conditions.

### **C. Terms and Conditions**

In order to be exempt from the prohibitions of section 9 of the ESA, the FHWA/Columbia County must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

1. In-water work:
  - a. Passage shall be provided for both adult and juvenile forms of all salmonid species throughout the construction period. FHWA/Columbia County designs will ensure passage of fishes as per ORS 498.268 and ORS 509.605.
  - b. All work within the ordinary high water mark of all anadromous fish-bearing systems, or in systems which could potentially contribute sediment or toxicants to downstream fish-bearing systems, will be completed within ODFW's in-water work period (July 15<sup>th</sup> to August 31<sup>st</sup>). An extension of the in-water work period has been approved by and coordinated with ODFW and NMFS to build the work platforms and drill the shafts for bents 2 and 3 from July 3<sup>rd</sup> to July 14<sup>th</sup>. No other extensions will be considered.
  - c. Alteration or disturbance of stream banks and existing riparian vegetation will be minimized. Where bank work is necessary, bank protection material shall be placed to maintain normal waterway configuration.
  - d. No pollutant of any kind (petroleum products, fresh concrete, silt, etc.) shall come in contact with the river.

### **2. Erosion and Pollution Control**

An Erosion Control Plan (ECP) has been prepared by Columbia County and will be implemented by the contractor. The ECP outlines how and to what specifications various erosion control devices will

be installed to meet water quality standards, and will provide a specific inspection protocol and time response. Erosion control measures will be sufficient to ensure compliance with all applicable water quality standards. The ECP shall be maintained on site and shall be available for review upon request.

- a. Erosion Control measures shall include (but not be limited to) the following:
  - i. The contractor will have the following on hand: 50 weed-free straw bales, 150 feet of unsupported silt fence, and 25 biobags.
  - ii. Temporary plastic sheeting for immediate protection of open areas (where seeding/ mulching are not appropriate), in accordance with ODOT's Standard Specifications.
  - iii. Erosion control blankets or heavy duty matting (e.g., jute) may be used on steep unstable slopes in conjunction with seeding or prior to seeding.
  - iv. Sills or barriers may be placed in drainage ditches along cut slopes and on steep grades to trap sediment and prevent scouring of the ditches. The barriers will be constructed from rock and straw bales.
  - v. Biobags, weed-free straw bales and loose straw may be used for temporary erosion control. Temporary erosion and sediment controls will be used on all exposed slopes during any hiatus in work on exposed slopes.
- b. Effective erosion control measures shall be in-place at all times during the contract. Construction within the 5-year flood plain will not begin until all temporary erosion controls (e.g., straw bales, silt fences) are in-place, downslope of project activities within the riparian area. Erosion control structures will be maintained throughout the life of the contract.
- c. All temporarily-exposed areas will be seeded and mulched. Erosion control seeding and mulching, and placement of erosion control blankets and mats (if applicable) will be completed on all areas of bare soil within 7 days of exposure within 150 feet of waterways, wetlands or other sensitive areas. All other areas will be stabilized within 14 days of exposure. Efforts will be made to cover exposed areas as soon as possible after exposure.
- d. All erosion control devices will be inspected during construction to ensure that they are working adequately. Erosion control devices will be inspected daily during the rainy season, and weekly during the dry season. Work crews will be mobilized to make immediate repairs to the erosion controls, or to install erosion controls during working and off-hours. Should a control measure not function effectively, the control measure will be immediately repaired or replaced. Additional controls will be installed as necessary.

- e. If soil erosion and sediment resulting from construction activities is not effectively controlled, the engineer will limit the amount of disturbed area to that which can be adequately controlled.
- f. Sediment will be removed from sediment controls once it has reached 1/3 of the exposed height of the control. Whenever straw bales are used, they will be staked and dug into the ground 12 cm. Catch basins shall be maintained so that no more than 15 cm of sediment depth accumulates within traps or sumps.
- g. Where feasible, sediment-laden water created by construction activity shall be filtered before it leaves the right-of-way or enters an aquatic resource area. Silt fences or other detention methods will be installed as close as possible to culvert outlets to reduce the amount of sediment entering aquatic systems.
- h. A supply of erosion control materials (e.g., straw bales and clean straw mulch) will be kept on hand to cover small sites that may become bare and to respond to sediment emergencies.
- i. All equipment that is used for in-water work will be cleaned prior to entering the two-year flood plain. External oil and grease will be removed, along with dirt and mud. Untreated wash and rinse water will not be discharged into streams and rivers without adequate treatment.
- j. On cut slopes steeper than 1:2 a tackified seed mulch will be used so that the seed does not wash away before germination and rooting occurs. In steep locations, a hydro-mulch will be applied at 1.5 times the normal rate.
- k. Material removed during excavation shall only be placed in locations where it cannot enter sensitive aquatic resources. Conservation of topsoil (removal, storage and reuse) will be employed.
- l. Measures will be taken to prevent construction debris from falling into any aquatic resource. Any material that falls into a stream during construction operations will be removed in a manner that has a minimum impact on the streambed and water quality.
- m. Project actions will follow all provisions of the Clean Water Act (40 CFR Subchapter D) and DEQ's provisions for maintenance of water quality standards not to be exceeded within the Nehalem Basin (OAR Chapter 340, Division 41). Toxic substances shall not be introduced above natural background levels in waters of the state in amounts which may be harmful to aquatic life. Any turbidity caused by this project shall not exceed DEQ water quality standards.

- n. The Contractor will develop an adequate, site-specific Spill Prevention and Countermeasure or Pollution Control Plan (PCP), and is responsible for containment and removal of any toxicants released. The Contractor will be monitored by the County Engineer to ensure compliance with this PCP. The PCP shall include the following:
  - i. A site plan and narrative describing the methods of erosion/sediment control to be used to prevent erosion and sediment for contractor's operations related to disposal sites, borrow pits operations, haul roads, equipment storage sites, fueling operations and staging areas.
  - ii. Methods for confining and removing and disposing of excess concrete, cement and other mortars. Also identify measures for washout facilities.
  - iii. A spill containment and control plan that includes: notification procedures; specific clean up and disposal instructions for different products; quick response containment and clean up measures which will be available on site; proposed methods for disposal of spilled materials; and employee training for spill containment.
  - iv. Measures to be used to reduce and recycle hazardous and non-hazardous waste generated from the project, including the following: the types of materials, estimated quantity, storage methods, and disposal methods.
  - v. The person identified in 00280 as the Erosion and Pollutant Control Manager (EPCM) shall also be responsible for the management of the contractor's PCP.
- o. Areas for fuel storage and servicing of construction equipment and vehicles will be located at least 150 feet away from the Nehalem River. Once the excavator is placed at the bottom of the slope, it can be refueled at that location. However, the contractor must write stringent protection measures in the Spill Prevention and Countermeasures Plan so that spill control supplies are available on the riverbank before the excavator is lowered. Overnight storage of vehicles must occur at least 150 feet away from the Nehalem River.
- p. Hazmat booms will be installed in all aquatic systems where:
  - i. Significant in-water work will occur, or where significant work occurs within the 5-year flood plain of the system, or where sediment/toxicant spills are possible.
  - ii. The aquatic system can support a boom setup (i.e. the creek is large enough, low-moderate gradient ).

- q. Hazmat booms will be maintained on-site in locations where there is potential for a toxic spill into aquatic systems. "Diapering" of vehicles to catch any toxicants (oils, greases, brake fluid) will be mandated when the vehicles have any potential to contribute toxic materials into aquatic systems.
- r. No surface application of nitrogen fertilizer will be used within 50 feet of any aquatic resource.

### 3. Riparian Habitat Protection Measures

- a. Boundaries of the clearing limits will be flagged by the project inspector. Ground will not be disturbed beyond the flagged boundary.
- b. Alteration of native vegetation will be minimized. Whenever trees or shrubs must be removed during the course of the project, the above ground portion of the vegetation will be pruned or cut so that the roots are left intact. This will reduce erosion while still allowing room to work.
- c. Riparian understory and overstory vegetation removed will have a replacement rate of 1.5:1. Replacement will occur within the project vicinity where possible. Any disturbed riparian areas must be planted with trees and shrubs, at a minimum.
- d. FHWA/Columbia County will provide \$4000 to the Nehalem Watershed Council to support ongoing in-stream and riparian habitat restoration activities in the upper Nehalem basin. These activities will be co-ordinated with ODFW and the Oregon Watershed Board. Activities that will be funded include blackberry removal and replacement with native riparian vegetation, placement of large wood in the stream channel, and fencing of riparian areas to exclude domestic animals from riparian habitats.
- e. The restoration work will address in-stream and riparian habitat needs within 5 miles of the action area. The restoration activities will be completed by December 2000.

### 4. Monitoring

- a. NMFS requests monitoring of the erosion control measures as described above in 2(d).
- b. All significant riparian replant areas will be monitored to insure the following:
  - i. Finished grade slopes and elevations will perform the appropriate role for which they were designed.

- ii. Plantings are performed correctly and have an adequate success rate.
- c. Failed plantings and structures will be replaced, if replacement would potentially succeed.
- d. By December 31 of the year following construction, FHWA/Columbia County shall submit to NMFS (Oregon Branch), a monitoring report with the results of the monitoring required in terms and conditions (4(a) to 4(c) above), and results of the habitat restoration activities (3(d) above) of the above reasonable and prudent measures.